WE CLAIM:

1. A method for providing a synchronization pattern for use in a communications system, the method comprising the steps of:

generating a plurality of synchronization patterns, wherein each of the plurality of synchronization patterns differ from the other synchronization patterns by a time shift;

encoding an information signal with a plurality of headers, each header comprising one of the plurality of synchronization patterns; and

transmitting the encoded information signal over a communications system.

2. The method of claim 1, wherein each of the plurality of synchronization patterns differs by the other synchronization patterns by a multiple of 1/m of a symbol-time shift, and wherein there are m headers, and m is any positive, non-zero integer.

3. The method of claim 1, wherein each of the plurality of synchronization patterns differs by the other synchronization patterns by a multiple of 1/m of a symbol-time shift, and wherein there are n headers, and m and n are any positive, non-zero integers such that m is not equal to n.

4. The method of claim 1, wherein the synchronization pattern is at least one of a random sequence, a pseudo-random sequence, and a periodic sequence.

5. The method of claim 1, wherein the synchronization pattern further comprises a maximal-length sequence of length 15 generated by a 4-bit linear feedback shift register.

6. A method for providing symbol synchronization in a communications receiver, the method comprising;

capturing a transmitted information signal comprising a plurality of synchronization patterns, wherein each synchronization pattern differs from the other synchronization patterns by a time shift;

generating a correlation peak from each of the plurality of synchronizations patterns; and

reordering the plurality of generated correlation peaks to provide a communications receiver symbol synchronization-offset pattern, whereby the receiver symbol synchronization-offset pattern simulates an oversampled synchronization pattern with improved signal to noise ratio over sampling at a higher sampling rate.

7. The method of claim 6, wherein each of the m transmitted synchronization patterns differs by the other synchronization patterns by a multiple of 1/m of a symbol-time shift, wherein m is any positive, non-zero integer.

8. The method of claim 6, wherein the synchronization pattern is at least one of a random pattern, a pseudo random pattern, and a periodic function.

9. The method of claim 8, wherein the synchronization pattern further comprises a maximal-length sequence of length 15 generated by a 4-bit linear feedback shift register.

10. The method of claim 6, wherein generating a correlation peak for each of the m transmitted synchronization patterns further comprises generating substantially the same synchronization pattern such that a correlation peak is generated.

11. A method for symbol synchronization in a communication transmitter, the method comprising the steps of:

generating a synchronization pattern;

encoding an information signal with m headers to provide an encoded information signal, wherein m is a positive integer and each header comprising the

synchronization pattern, wherein after the first synchronization pattern, each synchronization pattern is shifted by a fraction of a symbol-time from the other synchronization patterns; and

transmitting the encoded information signal over a communication medium.

12. The method of claim 11, wherein after the first synchronization pattern in the first header, each synchronization pattern is shifted by a multiple of 1/m of a symbol-time from the previous synchronization pattern.

13. The method of claim 11, wherein the synchronization pattern is at least one of a random sequence, a pseudo random sequence, and a periodic sequence.

14. The method of claim 11, wherein the synchronization pattern is a periodic sequence that is uniquely identifiable from the information signal.

15. The method of claim 11, wherein the synchronization pattern further comprises a maximal-length sequence of length 15 generated by a 4-bit linear feedback shift register.

16. A method for symbol synchronization in a communication receiver, the method comprising the steps of:

receiving an encoded information signal, wherein the encoded signal includes an information signal and m headers, wherein m is a positive integer and each header comprising a synchronization pattern, wherein after the first synchronization pattern, each synchronization pattern is shifted by a fraction of a symbol-time from the other synchronization patterns;

sampling the encoded information signal;

generating a correlation peak for each of the m transmitted synchronization patterns; and

reordering the m generated correlation peaks to provide a symbol synchronization-offset pattern, whereby the receiver symbol synchronization-offset

pattern simulates an m times oversampled synchronization pattern with improved signal to noise ratio over m times receiver samplings.

17. The method of claim 16, wherein after the first synchronization pattern in the first header, each synchronization pattern is shifted by a multiple of 1/m of a symbol-time from the previous synchronization pattern.

18. The method of claim 16, wherein the synchronization pattern is a periodic sequence that is uniquely identifiable from the information signal.

19. The method of claim 16, wherein generating a correlation peak for each of the m transmitted synchronization patterns further comprises generating substantially the same synchronization pattern such that a correlation peak is generated.

20. A system for providing a symbol synchronization pattern for use in communication systems, the system comprising:

a generation system arranged to provide a symbol synchronization pattern; and

an encoding system arranged to provide an information signal with m headers, each header comprising the generated symbol synchronization pattern, wherein m is any positive integer, and each symbol synchronization pattern is shifted by a fraction of a symbol-time from the other synchronization pattern.

21. The system of claim 20, wherein the fraction of symbol-time is a multiple of 1/m.

22. The system of claim 20, wherein the symbol synchronization pattern is at least one of a random sequence, a pseudo random sequence, and a periodic sequence.

23. The system of claim 20, wherein the symbol synchronization pattern further comprises a maximal-length sequence of length 15 generated by a 4-bit linear feedback shift register.

24. A receiving system for providing a symbol synchronization-offset signal for use in a communications system, the receiving system comprising:

a capturing system arranged to receive an information signal with a plurality of symbol synchronization patterns, wherein each of the plurality of synchronization patterns differ from the other synchronization patterns by a time shift;

a correlation generating system arranged to provide a correlation peak for each of the plurality of synchronization patterns; and

a symbol synchronization detecting system arranged to reorder the plurality of generated correlation peaks , such that a symbol synchronization-offset pattern is produced, whereby the symbol synchronization-offset pattern simulates an oversampled synchronization pattern with improved signal to noise ratio over true oversampled receiver samplings.

25. The receiving system of claim 24, wherein the synchronization pattern is at least one of a random sequence, a pseudo random sequence, and a periodic sequence.

26. The receiving system of claim 24, wherein the synchronization pattern further comprises a maximal-length sequence of length 15 generated by a 4-bit linear feedback shift register.

27. The receiving system of claim 24, wherein the receiving system is implemented in a watch device.

28. A system for providing a symbol synchronization-offset signal for use in communication systems, comprising:

a transmitting system arranged to provide a signal, wherein the signal includes a plurality of synchronization patterns, wherein each of the plurality of synchronization patterns differ from the other synchronization patterns by a time shift; and

a receiving system that is arranged to provide the symbol synchronization-offset signal, wherein the symbol synchronization-offset is produced by reordering a plurality of correlation peaks determined from the plurality of

transmitted synchronization patterns, whereby the receiver symbol synchronization-offset pattern simulates an oversampled synchronization pattern with improved signal to noise ratio over true oversampled receiver samplings.

29. The system of claim 28, wherein the synchronization pattern is at least one of a random sequence, a pseudo random sequence, and a periodic sequence.

30. The system of claim 28, wherein the synchronization pattern further comprises a maximal-length sequence of length 15 generated by a 4-bit linear feedback shift register.

31. A computer-readable medium encoded with a data structure for providing a synchronization pattern for use in a communications system, the data structure comprising a plurality of data fields stored in a plurality of headers of a data packet, wherein each of the plurality of data fields comprises a synchronization pattern, wherein each synchronization pattern differs from the other synchronization pattern by a fractional symbol-time shift.